Sample Media Characteristics ...

Fine-grained stream-sediment is the preferred sample medium in B.C. due to its widespread availability, ease of collection and analysis, and its ability to provide representative geochemical data for the drainage basin upstream from the sample site.

Moss-mat sediment is collected in areas, such as Vancouver Island, where conventional stream sediment is either scarce or not available. Living mosses, found in the stream channel below the high water level, filter suspended sediment from the stream water.

Lake sediment is collected in area s of low relief where streams are either nonexistent or very low energy. Stream and lake water samples are routinely taken as part of regional surveys. Ground water samples may be collected during more detailed geochemical surveys.

Application and Uses ...

Regional geochemical surveys are an established exploration tool which have been credited with numerous mineral discoveries. Exploration and development of B.C.'s mineral resources is the primary objective of the **RGS** Program. The **RGS** database is also used to :

- Outline regional geochemical trends and assist regional metallogenic studies and geological interpretations
- Assist in the evaluation of mineral potential and aid resource management and land-use planning initiatives.
- Provide background geochemical data useful for environmental assessments.

RGS data for all of the survey areas can be downloaded by the public from the Ministry of Energy and Mines, Geological Survey and development Branch Web Site (www.em.gov.bc.ca/Mining/Geolsurv/Geochinv/geochem.htm). It is also accessible through the Ministry's Map Place portal (www.em.gov.bc.ca/Mining/Geolsurv/MapPlace/) where selected element values can be viewed in relation to other themes including bedrock geology, geophysics, MINFILE mineral occurrence locations, topography and drainage.

Since the first publication of RGS data in 1977 survey results have been presented in a variety of hard-copy formats. More recently, survey results are distributed on a compact disc where the text and maps can be printed form PDF format files. Digital data is also available in a number of formats.

TO PURCHASE RGS DATA CONTACT :

Crown Publications Inc.
521 Fort Street
Victoria, B.C. V8W 1E7
Telephone : (250) 386-4636
Fax : (250) 386-0221

FOR MORE INFORMATION CONTACT:

Ray Lett, Geological Survey
P.O. Box 9333
Stn Prov Gov't
Victoria B.C. V8W 9N3
Email Ray.Lett@gov.bc.ca
Telephone : (250) 952-0396
Fax : (250) 952-0381

World Wide Web Site :
http://www.em.gov.bc.ca/Mining/Geolsurv/Geochinv/geochem.htm

RGS

British Columbia Regional Geochemical Survey Database

BRITISH COLUMBIA GEOLOGICAL SURVEY

BRITISH COLUMBIA
Ministry of Energy, Mines and Petroleum Resources

RGS

INFORMATION CIRCULAR 2006-3

RGS Program Summary ...

The B.C. Ministry of Energy and Mines Regional Geochemical Survey **(RGS)** Program develops, maintains and disseminates a comprehensive geochemical database consisting of stream- sediment, moss-sediment, lake-sediment, stream-water and lake-water analytical data plus field site observations.

Data from joint federal-provincial reconnaissance-scale geochemical surveys have been systematically collected, compiled and regularly published in B.C. since 1976. Survey standards are based on the National Geochemical Reconnaissance Program which was originally developed by the Geological Survey of Canada.

Currently, the **RGS** database contains determinations for up to 40 metals, field observations and sample location information for approximately 50,000 sample site locations covering over 70 per cent of the province. This data is used in the exploration and development of B.C.'s mineral resources, resource management and land-use planning, and environmental assessments.

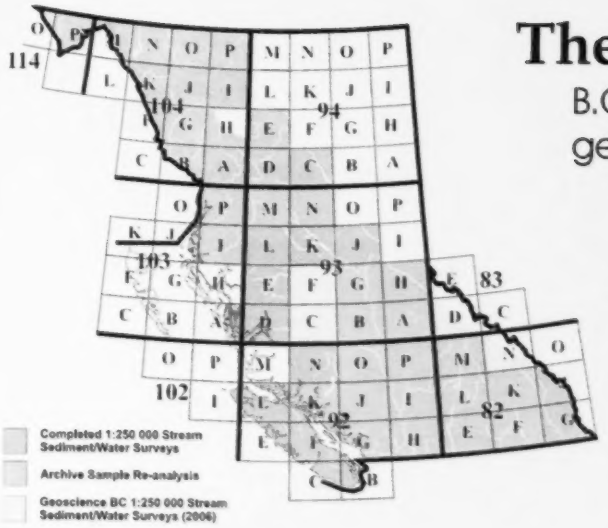
Regional Geochemical Surveys ...

Regional geochemical surveys provide a representative measurement of the concentration of metals in the environment. Resultant data illustrate the natural metal variability of the Earth (geochemistry) and highlight areas of elevated or depleted concentrations of metals (geochemical anomalies).

The **RGS** Program commonly evaluates areas covering in excess of 10,000 square kilometres. Samples are collected from first or second order drainage basins which have an average area of 10 to 13 square kilometres.

The RGS Database ...

B.C's largest and most comprehensive geochemical database.



Quality control procedures are routinely conducted to ensure data integrity is maintained for each component of the RGS program.

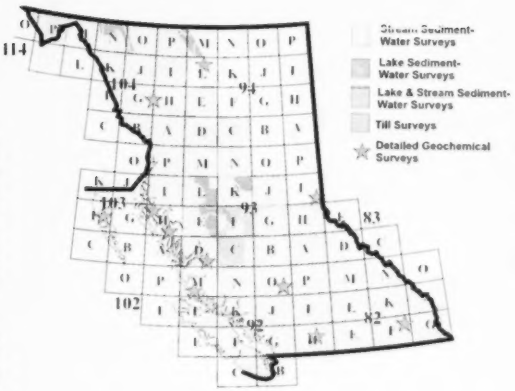
- Field site checks are conducted by Ministry personnel to monitor, control and assess sample collection activities. Samples are evaluated during sample preparation for quality and quantity of fine-grained sediment material.
- Sediment samples are analyzed using aqua regia-atomic absorption spectrophotometry (AAS) and instrumental neutron activation analysis (INAA). Inductively coupled plasma mass spectrometry (ICPMS) has replaced AAS in RGS 55, 56, 57 and 58. Prior to analysis, analytical duplicate samples and control reference materials are inserted into each analytical block of 20 samples. Control reference water standards are inserted into each analytical block of 20 water samples. Analytical results for field-site duplicates, analytical duplicates and control reference materials are closely monitored and evaluated.

Database Summary ...

Survey Area	Package I.D.	Sample Sites	Sample Media	Original RGS Release	Additional Post Release Element Analyses	Water Analyses	INAA Release
82E	RGS 29	1545	SS,SW	1977		U,F,pH	1991
82F	RGS 30	1318	SS,SW	1978	Sn,Hg	U,F,pH	1991
82G	RGS 27	924	SS,SW	1991	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr	U,F,pH,SO4	1991
82J	RGS 28	588	SS,SW	1991	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr	U,F,pH,SO4	1991
82K	RGS 31	1225	SS,SW	1978	Sn,W,Hg	U, F, pH	1991
82L	RGS 32	1309	SS,SW	1977		U, F, pH	1991
82M	RGS 33	1151	SS,SW	1978	Hg	U, F, pH	1991
92B/C	RGS 24	599	MS,SW	1990	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	
92E	RGS 21	386	MS,SW	1989	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	
92F	RGS 25	909	MS,SS,SW	1990	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	
92G	RGS 26	855	SS,SW	1990	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	2006
92H	RGS 39	940	SS,SW	1982	W,Hg,As,Sb	U, F, pH	1994
92I	RGS 40	572	SS,SW	1982	W,Hg,As,Sb	U, F, pH	1994
92J	RGS 41	806	SS,SW	1982	W,Hg,As,Sb	U, F, pH	1994
92K	RGS 22	1216	MS,SS,SW	1989	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	2006
92L/102I	RGS 23	1144	MS,SS,SW	1989	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	2006
92N	RGS 34	820	SS,SW	1992	Sn,W,Hg,As,Sb,Cd,V,LOI,F,Bi,Cr	U,F,pH,SO4	1992
92O	RGS 35	885	SS,SW	1980	W,Hg,As	U, F, pH	1992
92P	RGS 36	863	SS,SW	1980	W,Hg,As	U, F, pH	1992
93A	RGS 50	1219	SS,SW	1981	W,Hg,As,Sb	U, F, pH	1999
93B	RGS 06	715	SS,SW	1981	W,Hg,As,Sb	U, F, pH	2001
93D/103A	RGS 56	1180	SS,SW	2002	**ICPMS, INAA**	U, F, pH	
93E	RGS 16	1112	SS,LS,SW,LW	1987	W,Hg,As,Sb,Ba,Cd,LOI,**Au**	U, F, pH	
93G	RGS 13	1095	SS,SW	1986	W,Hg,As,Sb,Ba,Cd,V,LOI	U, F, pH	2002
93H	RGS 14	1119	SS,SW	1986	W,Hg,As,Sb,Ba,Cd,V,LOI	U, F, pH	2002
93J	RGS 15	1088	SS,SW	1986	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI	U, F, pH	
93K	RGS 57	795	SS,SW	2003	**ICPMS, INAA**	U,F,pH	
93L	RGS 17	1093	SS,LS,SW,LW	1987	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,**Au**	U, F, pH	
93M	RGS 48	1037	SS,SW	1984	W,Hg,As,Sb	U, F, pH	1998
93N	RGS 49	1060	SS,SW	1984	W,Hg,As,Sb	U, F, pH	1998
94C	RGS 47	1008	SS,SW	1998	Hg,As,Sb,Cd,V,LOI,F,Bi	U,F,pH,SO4	1998
94D	RGS 45	976	SS,SW	1997	Hg,As,Sb,Cd,V,LOI,F,Bi	U,F,pH,SO4	1997
94E	RGS 46	909	SS,SW	1997	Hg,As,Sb,Cd,V,LOI,F,Bi	U,F,pH,SO4	1997
103I/J	RGS 42	2128	SS,SW	1979	W,Hg,As	U, F, pH	1995
103O/P	RGS 43	1780	SS,SW	1979	W,Hg,As	U, F, pH	1995
104A/H	RGS 58	1385	SS,SW	2005	**ICPMS, INAA**		
104B	RGS 18	660	SS,SW	1988	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	
104F/G	RGS 19	1219	SS,SW	1988	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	
104I	RGS 44	1159	SS,SW	1996	Hg,As,Sb,Cd,V,LOI,F,Bi	U,F,pH,SO4	1996
104J	RGS 55	908	SS,SW	2000	**ICPMS, INAA**	U,F,pH,SO4	
104K	RGS 20	847	SS,SW	1988	Sn,W,Hg,As,Sb,Ba,Cd,V,LOI,F,Bi,Cr,**Au**	U, F, pH	
104M	RGS 37	741	SS,SW	1993	Hg,As,Sb,Cd,V,LOI,F,Bi	U,F,pH,SO4	1993
104N	RGS 51	885	SS,LS,SW,LW	1978	Sn,W,Hg	U, F, pH	2000
104O	RGS 52	892	SS,LS,SW,LW	1979	W	U, F, pH	2000
104P	RGS 53	802	SS,SW	1979	W	U, F, pH	2000
114O/P	2006_04	1065	SS,SW	2006	Hg,As,Sb,Cd,V,LOI,F,Bi	U,F,pH,SO4	2006

Sample Media: SS=Stream Sediment, MS=Moss Sediment, LS=Lake Sediment, SW=Stream Water, LW=Lake Water
AAS Suite: Zn, Cu, Pb, Ni, Co, Ag, Mn, Fe, Mo, U
INAA Suite: **Au**, Sb, As, Ba, Br, Ce, Cs, Cr, Co, Hf, Fe, La, Lu, Mo, Ni, Rb, Sm, Sc, Na, Ta, Tb, Th, W, U, Yb, Zr
ICP/MS Suite: **Au**, Al, Sb, As, Bi, Ba, Cd, Ca, Cr, Co, Ga, Fe, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sc, Sr, Te, Ti, Th, Tl, W, U, V, Zn

Added Value to the RGS...



Results of sampling at a density higher than 1:250 000 reconnaissance scale stream sediment and water surveys or using other media such as lake sediment add value to the RGS database. These surveys are applied to areas where conventional stream sediment sampling is unsuitable or to focus on a specific target. Survey sample types for which data has been published include lake sediment, till and heavy mineral concentrate.